

CLAIMS

1. A millimetre wave imaging apparatus comprising scanning means,
5 focusing means and a plurality of receiver elements, the focusing means
being physically interposed between the scanning means and the receiver
elements, the scanning means being arranged to scan radiation from a field
of view onto said focusing means such that focussed radiation from a
region of the field of view is incident upon at least one of the plurality of
10 receiver elements.
2. Apparatus according to Claim 1 wherein the scanning means is a
prism.
- 15 3. Apparatus according to Claim 2 wherein the prism is a wedge prism.
4. Apparatus according to Claim 2 wherein the prism is of uniform
thickness and varying refractive index across a cross-section thereof.
- 20 5. Apparatus according to any one of Claims 2 to 4 wherein the prism
is arranged to rotate.
6. Apparatus according to Claim 5 wherein the prism is arranged to
produce a circular scan path in the focal plane.
- 25 7. Apparatus according to any preceding claim wherein the scanning
means comprise two prisms.
8. An apparatus according to Claim 7 wherein each of the prisms is
30 arranged to rotate.

9. An apparatus according to Claim 8 wherein the prisms are arranged to rotate in opposite directions to each other.
10. An apparatus according to any one of Claims 7 to 9 wherein the prisms are arranged to produce an elliptical scan path in the focal plane.
11. An apparatus according to Claim 10 wherein the elliptical scan path has a minor diameter that approximately corresponds to a spacing between adjacent receiver element of an array.
12. An apparatus according to Claim 10 or Claim 11 wherein the plurality of receivers are formed into a two dimensional array, and the elliptical scan path has a major diameter that approximately corresponds to a distance between adjacent receiver elements of an array.
13. An apparatus according to any one of Claims 7 to 12 wherein the prisms are arranged to rotate at a rate of at least 25 revolutions per second.
14. An apparatus according to any preceding claim wherein the plurality of receiver elements are arranged in a linear array, a curvilinear array or a sparse two dimensional array.
15. An apparatus according to any preceding claim wherein the focusing means is a reflector lens.
16. An apparatus according to Claim 15 wherein the reflector lens comprises a first polarising element.
17. An apparatus according to either of Claims 15 or 16 wherein the reflector lens comprises a second polarising element arranged to reflect radiation transmitted by the first polarising element.

18. An apparatus according to any one of Claims 15 to 17 wherein the reflector lens comprises a polarisation altering element.
19. Apparatus according to any preceding claim wherein the scanning
5 means, which is arranged to define an entrance pupil of the apparatus, is placed at the effective centre of curvature of the focusing means.